I. AMENDMENTS

IN THE CLAIMS

Cancel claim 35 without prejudice to renewal.

Please enter the amendment to claims 20, 26, and 32, as shown below.

1.-19. (Canceled)

20. (Currently amended) A method of screening for an agent that modulates capsaicin receptor function, the method comprising:

a) combining a candidate agent with a eukaryotic cell comprising a recombinant nucleic acid comprising a nucleotide sequence that encodes a biologically active capsaicin receptor polypeptide, which nucleotide sequence is operably linked to a promoter, wherein said capsaicin receptor is encoded by a polynucleotide that hybridizes under stringent hybridization conditions to the complement of a polynucleotide having the sequence set forth in SEQ ID NO:1, and wherein the capsaicin receptor polypeptide is expressed on the cell surface; and

b) determining the effect of said agent on capsaicin receptor function.

21. (Previously presented) The method of claim 20, wherein said determining is by measuring capsaicin receptor-mediated increase in intracellular concentration of a cation.

22. (Previously presented) The method of claim 21, wherein the cation is selected from the group consisting of calcium, magnesium, potassium, cesium, and sodium.

23. (Previously presented) The method of claim 21, wherein the cation is calcium.

24. (Previously presented) The method of claim 20, wherein said determining is by measuring a capsaicin receptor-mediated electrophysiological response.

25. (Previously presented) The method of claim 24, wherein the electrophysiological response is an inward cation-specific current.

26. (Currently amended) The method of claim 24 [[23]], wherein the response is measured using a fluorescent voltage-sensitive dye.

27. (Previously presented) The method of claim 20, wherein said determining is by measuring blocking the activity of a capsaicin receptor antagonist.

28. (Previously presented) The method of claim 27, wherein the capsaicin receptor antagonist is selected from the group consisting of capsazepine and ruthenium red.

29. (Previously presented) The method of claim 20, wherein said determining is by measuring blocking the activity of a capsaicin receptor agonist.

30. (Previously presented) The method of claim 29, wherein the capsaicin receptor agonist is selected from the group consisting of resiniferatoxin and capsaicin.

31. (Previously presented) The method of claim 20, wherein said determining is by measuring capsaicin receptor-mediated apoptosis.

32. (Currently amended) The method of claim 20, wherein said cell further comprises a reporter gene operably linked to a calcium inducible promoter, and wherein said determining is by measuring calcium-induced ~~reporter gene~~ expression of the reporter gene.

33. (Previously presented) The method of claim 20, wherein the cell is selected from the group consisting of an amphibian oocyte, a mammalian cell line, and a cultured neuron.

34. (Previously presented) The method of claim 20, wherein the capsaicin receptor is a mammalian capsaicin receptor.

35. (Canceled)